REMARKS

These remarks are in response to the Final Office Action mailed January 6, 2005. Claims 12, 14, 15, 18-20, and 45-52 are pending in the present application, claims 21-25 being withdrawn from consideration, claims 1-11, 13, 16, 17and 26-44 being cancelled.

In the Final Office Action mailed January 6, 2005, the Examiner objected to claim 52 because it was not dependent upon any other claim. Claim 52 has been amended to make it dependent upon claim 12. Furthermore, the Examiner rejected claims 12-15, and 45-52 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,873,203 to Thiel in view of U.S. Patent No. 4,587,769 to Cathers; rejected claims 18 –20 under 35 U.S.C. §103(a) as being unpatentable over Thiel in view of Cathers and U.S. Patent No. 2,723,427 to Bobel.

Claims 12-15 and 45-52 are rejected under 35 U.S.C. §103(a) as being unpatentable over Thiel in view of Cathers. Claim 12 has been amended to include the feature of dependent claim 13 that specified that the "functional" coating was an "active" coating. Claim 13 has been cancelled. Claims 14, 15, 19, 45 and 52 have been amended.

Independent claim 12 calls for a multiple-pane insulating glass unit having two spaced-apart panes and a spacer joining confronting, inner peripheral surfaces of the panes. The spacer and the confronting surfaces of the panes together define a between-pane space. At least one of the panes has an outer surface bearing an active coating, the outer surface having a peripheral region that is substantially free of the active coating. In addition, the pane has a coated inner surface bearing a low-emissivity coating, said coated inner surface having a peripheral region that is substantially free of the low-emissivity coating. The specification at page 8 defines an "active" coating as are "a coating, wherein currently known or subsequently developed, that has self-cleaning properties."

Thiel discloses multiple sheets maintained in a spaced relationship where the surface of each sheet facing an interior air space region between adjacent sheets is coated and has a peripheral region free of the coating. Thiel discloses that functional coatings may be present on the interior or exterior

surfaces of the sheets or other interior and/or exterior surfaces of the multiple-glazed window unit. As the Examiner admits, however, Thiel does not disclose that both major surfaces of a sheet have a peripheral region that is substantially free of the functional coating. The exterior surfaces of the sheets, i.e., the surface facing exterior, may be coated but the entire surface is coated. The exterior surfaces do not have a peripheral region that is free of the coating.

The Examiner relies on Cathers to provide the teaching missing from Thiel. It is Applicant's position that the Examiner has not established a prima facie case of obviousness because the combination of Thiel and Cathers does not teach or suggest all of the claim limitations.

Cathers discloses that glass sheets are often coated with a metal-containing film and that when such coated glass sheets are fabricated into window units, it may be desirable to remove a portion of the film along the perimeter of the coated glass surface where sealants or adhesives are applied in order to provide direct contact with the glass to prevent reaction with the film.

Cathers thus discloses the conventional wisdom of removing a chemically-sensitive silver-based coating (for an inner surface of a multiple-pane unit) from the interior periphery of a single pane surface in the context of fabricating glass sheets into multiple-pane units. There is no disclosure or suggestion of removing film from an exterior surface of the pane of glass. In fact, as applicant stated on page 4 of the subject application:

> [o]ne might not expect exterior photocatalytic coatings to require edge deletion. For example, consider once again the installation of an IG unit. As shown in Figure 3, the peripheral regions of the exterior coating 20 are typically concealed both by the glazing compound 70 and by the shoulders 57 of the frame 50. As a result, the peripheral regions of an exterior photocatalytic coating might not be expected to exhibit significant photoactivity. Photocatalytic coatings require both moisture and incident radiation to exhibit photoactivity. In principle, neither one of these commodity would be readily available at the concealed peripheral areas of an exterior coating. For example, glazing compound is intended to seal against water infiltration between the pane and the frame. Thus, moisture would not be expected to

reach the coating areas sealed beneath the glazing compound. Moreover, these peripheral coating areas are typically sandwiched between the shoulders 57 of the frame 50. As a result, these coating areas would be largely shielded from incident radiation.

Notwithstanding this concealment of peripheral exterior coating, moisture and radiation both may reach the peripheral areas of an exterior photocatalytic coating. For example, glazing compound may have enough permeability to allow sufficient migration of moisture to these concealed coating areas to support photocatalysis. Further, while these peripheral coating areas may be shielded from direct radiation, multiple reflections within a pane or IG unit may deliver radiation to these coating areas in sufficient quantity to generate photoactivity. As a consequence, photoactivity may occur at the concealed peripheral areas of an exterior photocatalytic coating. The unfortunate result may be chemical degradation of nearby glazing compound.

Degradation of glazing compound may have undesirable consequences. For example, even the slightest deterioration of glazing compound may allow water to infiltrate between a monolithic pane or IG unit and the surrounding frame. This is perhaps best illustrated with reference to Figure 3. If water were to permeate the glazing compound 70 on either side of the IG unit, then the glazing channel 60 of the frame 50 may accumulate water. This could lead to corrosion of the underlying frame structure. In severe circumstances, the bottom of the IG unit may be left sitting in water, which could contain chemicals from glazing compound, sealant, paint, and a variety of other sources. Ultimately, this may cause the edge seal of the IG unit to fail, which would typically necessitate replacement of the entire IG unit.

Glazing compound deterioration may have other dire consequences as well. For example, glazing compound density and volume may decrease, potentially exacerbating the water infiltration problem discussed above. In extreme cases, this may eventually cause a monolithic pane or IG unit to become loose in its frame. Moreover, depending upon the manner in which a given pane or IG unit is mounted, glazing compound deterioration may be a safety hazard. For example, in frameless glazing installations, panes may be fixed in position primarily by adhesion to glazing compound. In applications of this nature, deterioration of the glazing compound could conceivably cause a pane to fall from its mount at some time over the life of the

product. This could be extremely dangerous, for example, in cases where the panes are carried against the exterior of a tall building or the like.

Thus, the active coating is removed around the periphery of the exterior surface of the glass sheet to avoid degradation of the glazing compound not to promote adhesion.

Further, the Examiner has not shown a motivation to combine the elements found in the prior art and apply them to an exterior surface of a pane of glass or IG unit. The applied art fails to identify problems associated with mounting a pane or IG unit having an active exterior coating in the frame of a building without edge deleting the active exterior coating. Cathers reflects the conventional motivation to remove the periphery of an interior silver-based coating, based upon the well-known chemical sensitivity of silver-based coatings and their tendency to degrade and potentially ruin the hermetic seal that is desired between the spacer and panes of an IG unit. Thus, although the applied art, at best, provides a motivation to edge delete an interior coating, it fails to provide a reason or motivation for edge deleting an exterior coating. In particular, this art fails to appreciate problems associated with not edge deleting an active exterior coating as disclosed in Applicant's specification (e.g., from the second full paragraph of page 3 through the first paragraph of page 5), and likewise fails to appreciate the benefits providing an edge-deleted active exterior coating. Therefore, a prima facie case of obviousness has not been made.

With regard to the rejection of claims 18 –20 under 35 U.S.C. §103(a) as being unpatentable over Thiel in view of Cathers and Bobel, a prima facie case of obviousness has not been made. Claims 18 - 20 are dependent from independent claim 12. As discussed above, a prima facie case of obviousness has not been made for claim 12. Therefore, independent claim 12 is considered allowable, and dependent claims 18 - 20 are also considered allowable because they further limit the claimed invention.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested. The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution. The Commissioner is authorized and requested to charge to Deposit Account No. 061910 any underpayments, overpayments, or additionally required fees.

Respectfully submitted,

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